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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,986	11/21/2001	Hideo Tashiro	05426/014001	1725

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EXAMINER	
FORMAN, BETTY J	

ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

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Office Action Summary	Application No.	Applicant(s)	
	09/989,986	TASHIRO ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-21* is/are pending in the application.

4a) Of the above claim(s) *8 and 16-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,9-15 and 19-21* is/are rejected.

7)☐ Claim(s) _____ *is/are objected to.*

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage *application from the International Bureau (PCT Rule 17.2(a)).*

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 14 October 2003 in which claims 1-5 and 9 were amended; claim 6 was canceled; claims 19-21 were added; a new Abstract was submitted; and the specification at pages 9 and 12 was amended. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 14 July 2003, not reiterated below are withdrawn in view of the amendments. All of the arguments have been thoroughly reviewed and are discussed below as they pertain to the instant rejections. New grounds for rejection necessitated by amendment are discussed.

It is noted that the listing of Claims on pages 4-7 of the Response incorrectly identifies Claims 8 and 16-18 as "previously presented". To be correct, the claims should be identified as "withdrawn".

Claims 8 and 16-18 are withdrawn from prosecution.

Claims 1-5, 7, 9-15 and 19-21 are under prosecution.

Specification

2. The amendment filed 14 October 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The specification and abstract have been amended to recite "DNA immobilizing-agent coating" and "biomolecule-immobilizing agent coating". However, the specification, as originally filed does not describe the newly recited coatings. Furthermore, Applicant has not pointed to a teaching of the newly recited coatings in the originally filed specification. Therefore, the amendments introduce new matter into the disclosure.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

35 U.S.C. 112: First paragraph

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5, 7, 9-15 and 19-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation "biomolecule-immobilizing agent coating" is added to amended independent claim 1 (from which all pending claims depend) and dependent claims 2 and 4. However, the specification fails to define or provide any disclosure to support such claim recitation.

MPEP 2163.06 notes "IF NEW MATTER IS ADDED TO THE CLAIMS, THE EXAMINER SHOULD REJECT THE CLAIMS UNDER 35 U.S.C. 112, FIRST PARAGRAPH - WRITTEN DESCRIPTION REQUIREMENT. *IN RE RASMUSSEN*, 650 F.2D 1212, 211 USPQ 323 (CCPA 1981)." MPEP 2163.02 teaches that "Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application." MPEP 2163.06 further notes "WHEN AN AMENDMENT IS FILED IN REPLY TO AN OBJECTION OR REJECTION BASED ON 35 U.S.C. 112, FIRST PARAGRAPH, A STUDY OF THE ENTIRE APPLICATION IS OFTEN NECESSARY TO DETERMINE WHETHER OR NOT "NEW MATTER" IS INVOLVED. *APPLICANT SHOULD THEREFORE SPECIFICALLY POINT OUT THE SUPPORT FOR ANY AMENDMENTS MADE TO THE DISCLOSURE*" (emphasis added).

35 U.S.C. 112: Second paragraph

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-5, 7, 9-15 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5, 7, 9-15 and 19-21 are indefinite in Claim 1 for the recitation "by means of photolithography" because it is unclear whether the recitation modifies the one or both of the "forming" step, the "subjecting" steps, the "covering" steps, the "removing" steps and/or some other non-described component of the microarray.

Claims 5, 19 and 20 are each indefinite for the recitation "having one of probe biomolecules DNA, RNA, PNA or protein" because it is unclear whether the recitation is intended to recite a Markush group consisting of 1) probe biomolecules, 2) DNA, 3) RNA, 4) PNA or 5) protein or whether the recitation is intended to recite a group consisting of 1) probe biomolecules DNA, 2) RNA, 3) PNA or 4) protein". It is suggested that the claims be amended

to recite proper Markush Groups e.g. having probe molecules selected from the group consisting of DNA, RNA, PNA or protein (see MPEM § 2173.05(h)).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The claims are drawn to a microarray support comprising a plurality of probe-attachable spots arrayed in a regular arrangement on the surface of the support characterized in that the spots have highly-accurate uniform size and shape. The claims further recite the process for making the microarray support. However, the courts have stated that a produce is

not defined by the process of making it, but is distinguished over the prior art by the product itself.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) see MPEP 2113.

Therefore, the instantly recited process steps do not define the microarray over the prior art.

Furthermore, the recitation "a highly-accurate uniform size and shape" describes a size and shape relative to some other undescribed spots. That is, the claimed spots have highly accurate uniform size and shape in comparison to some unnamed spots. However, any spots have highly accurate uniform size and shape when compared to some spots. For example, a well of a multiwell plate has a highly-accurate and uniform size and shape spot when compared to spots of a chromosome spread. As such, the recitation does not define the size or shape over those of other spots known in the art.

Claim 1 further recites a process step "formed by covering the surface of the support other than the spots with a cover coating, subjecting the surface of the support to a biomolecule-immobilizing agent coating forming treatment and removing the cover coating". The recited process step does not define the microarray over a prior art microarray having regions (spots) of biomolecule-immobilizing agents (e.g. functional groups or biotin or avidin etc) because the process step results in a surface having spots of biomolecule-immobilizing agents. Because the courts have stated that a product is defined by the product itself and not by the process of making the product, the recited process step does not define the microarray over a surface having spots of biomolecule-immobilizing agents.

Claim 1 also recites "by means of photolithography". However, for the reasons stated above, the recitation does not define the microarray over microarrays having the surface having spots of biomolecule-immobilizing agents.

35 USC § 102 over Dale

9. Claims 1-5, 7, 9-15 and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Dale (U.S. Patent No. 6,440,723, filed 17 March 2000).

Regarding Claim 1, Dale discloses a microarray support for spotting solutions containing probe biomolecules, the support comprising a plurality of small-sized probe biomolecule-attachable spots arrayed in a regular arrangement on the surface of the support (Column 2, lines 37-44; Column 7, line 65-Column 8, line 25; and Claims 1-13).

The recitations "small-sized" and "arrayed in a regular arrangement" are given the broadest reasonable interpretation consistent with the broad claim language. Dale teaches the spots are "very small" (Column 17, lines 1-8) and they teach that the spots form a pattern (e.g. Column 19, lines 9-24). The teaching of Dale is encompassed by the broadly claimed "small-sized" and "regular arrangement".

Regarding Claim 2, Dale discloses the microarray wherein the biomolecule-attachable spots have a layer selected from the group consisting of avidin, streptavidin, biotin, amino group, carbonyl group, hydroxyl group, succinimide group, maleimide group and thiol group (Column 7, line 65-Column 8, line 25; Column 13, line 48-Column 14, line 65; and Column 18, lines 10-16).

Regarding Claim 3, Dale discloses the microarray wherein the support is glass, silicon or plastic (Column 17, lines 40-60).

Regarding Claim 4, Dale discloses the microarray wherein said biomolecule-attachable spot have avidin molecules bound to a single layer to the ends of biotin bound to the surface of the support i.e. the surface is spotted with biotin and avidin-modified probes are bound to the biotin to form a single layer (Column 13, lines 48-Column 14, line 6).

Regarding Claim 5, Dale discloses the microarray wherein probe biomolecules are DNA, RNA or proteins (Column 4, lines 52-61 and Column 5, lines 1-7).

Regarding Claim 7, Dale discloses the microarray wherein the probe biomolecules are biotin-labeled and are bound to the probe-attachable spots by biotin-avidin binding (Column 7, line 65-Column 8, lines 25).

Regarding Claim 9, Dale discloses the microarray of Claim 2 wherein the support is glass, silicon or plastic (Column 17, lines 40-60O.

Regarding Claim 10, Dale discloses the microarray of Claim 2 wherein said biomolecule-attachable spot have avidin molecules bound to a single layer to the ends of biotin bound to the surface of the support i.e. the surface is spotted with biotin and avidin-modified probes are bound to the biotin to form a single layer (Column 13, lines 48-Column 14, line 6).

Regarding Claim 11, Dale discloses the microarray of Claim 3 wherein said biomolecule-attachable spot have avidin molecules bound to a single layer to the ends of biotin bound to the surface of the support i.e. the surface is spotted with biotin and avidin-modified probes are bound to the biotin to form a single layer (Column 13, lines 48-Column 14, line 6).

Regarding Claim 12, Dale discloses the microarray of Claim 2 wherein probe biomolecules are bound to the probe-attachable spots (Column 7, line 65-Column 8, line 25 and Column 13, line 48-Column 14, line 6).

Regarding Claim 13, Dale discloses the microarray of Claim 3 wherein probe biomolecules are bound to the probe-attachable spots (Column 7, line 65-Column 8, line 25 and Column 13, line 48-Column 14, line 6).

Regarding Claim 14, Dale discloses the microarray of Claim 4 wherein probe biomolecules are bound to the probe-attachable spots (Column 7, line 65-Column 8, line 25 and Column 13, line 48-Column 14, line 6).

Regarding Claim 15, Dale discloses the microarray of claim 6 wherein the probe biomolecules are biotin-labeled and are bound to the probe-attachable spots by biotin-avidin binding (Column 7, line 65-Column 8, lines 25).

Regarding Claim 19, Dale discloses the microarray wherein probe biomolecules are DNA, RNA or proteins (Column 4, lines 52-61 and Column 5, lines 1-7).

Regarding Claim 20, Dale discloses the microarray wherein probe biomolecules are DNA, RNA or proteins (Column 4, lines 52-61 and Column 5, lines 1-7).

Response to Arguments

10. Applicant argues that Dale uses a conventional spotting technique, not photolithography as newly claimed. Applicant further argues that Dale does not teach the spots have highly accurate uniform size and shape. The arguments have been considered but are not found persuasive for the reasons stated above i.e. any spots have highly accurate uniform size and shape when compared to some spots and the courts have stated that a process of making a product (i.e. microarray) does not define the product over the prior art.

35 USC § 102 over Brown et al

11. Claims 1-3, 5, 9, 12, 13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al (U.S. Patent No. 5,807,522, issued 15 September 1998).

Regarding Claim 1, Brown et al disclose a microarray support for spotting solutions containing probe biomolecules, the support comprising a plurality of small-sized probe

biomolecule-attachable spots arrayed in a regular arrangement on the surface of the support (Column 11, line 51-Column 12, line 22 and Fig. 11).

The recitations "small-sized" and "arrayed in a regular arrangement" are given the broadest reasonable interpretation consistent with the broad claim language. Brown et al teach the spots are about 1x1mm (Column 11, lines 62-67) and they illustrate the spots form a pattern (e.g. Fig. 5-6). The teaching of Brown et al is encompassed by the broadly claimed "small-sized" and "regular arrangement".

Regarding Claim 2, Brown et al teach the microarray wherein the biomolecule-attachable spots have a layer selected from the group consisting of amino group (Column 4, lines 34-44).

Regarding Claim 3, Brown et al disclose the microarray wherein the support is glass, or plastic (Column 4, lines 35-43).

Regarding Claim 5, Brown et al disclose the microarray wherein probe biomolecules are DNA or proteins (Column 4, lines 16-24).

Regarding Claim 9, Brown et al disclose the microarray of Claim 2 wherein the support is glass, or plastic (Column 4, lines 35-43).

Regarding Claim 12, Brown et al disclose the microarray of Claim 2 wherein probe biomolecules are bound to the probe-attachable spots (Column 11, line 51-Column 12, line 22 and Fig. 11).

Regarding Claim 13, Brown et al disclose the microarray of Claim 3wherein probe biomolecules are bound to the probe-attachable spots (Column 11, line 51-Column 12, line 22 and Fig. 11).

Regarding Claim 19, Brown et al disclose the microarray wherein probe biomolecules are DNA or proteins (Column 4, lines 16-24).

Response to Arguments

12. Applicant argues that Brown et al use a conventional spotting technique, not photolithography as newly claimed. Applicant further argues that Dale does not teach the spots have highly accurate uniform size and shape. The arguments have been considered but are not found persuasive for the reasons stated above i.e. any spots have highly accurate uniform size and shape when compared to some spots and the courts have stated that a process of making a product (i.e. microarray) does not define the product over the prior art.

35 USC § 102 over Sluka et al

13. Claims 1-3 and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Sluka et al (U.S. Patent No. 6,221,674, issued 24 April 2001).

Regarding Claim 1, Sluka et al disclose a microarray support for spotting solutions containing probe biomolecules, the support comprising a plurality of small-sized probe biomolecule-attachable spots arrayed in a regular arrangement on the surface of the support (Abstract; Example 1, Column 4, lines 30-62; Fig. 4 and Claims 1-11).

The recitations "small-sized" and "arrayed in a regular arrangement" are given the broadest reasonable interpretation consistent with the broad claim language. Sluka et al teach the spots are < 5mm(Column 3, lines 57-65) and they teach that the spots form a pattern (Fig. 4). The teaching of Sluka is encompassed by the broadly claimed "small-sized" and "regular arrangement".

Regarding Claim 2, Sluka et al disclose the microarray wherein the biomolecule-attachable spots have a layer selected from the group consisting of avidin, streptavidin, biotin, and thiol group (Column 3, lines 31-37 and Claim 7).

Regarding Claim 3, Sluka et al disclose the microarray wherein the support is glass, gold, gold plated, silver or silver plated (Column 3, lines 4-19).

Regarding Claim 9, Sluka et al disclose the microarray of Claim 2 wherein the support is glass, silicon or plastic (Column 3, lines 4-19).

Response to Arguments

14. Applicant argues that Sluka et al use a conventional spotting technique, not photolithography as newly claimed. Applicant further argues that Dale does not teach the spots have highly accurate uniform size and shape. The arguments have been considered but are not found persuasive for the reasons stated above i.e. any spots have highly accurate uniform size and shape when compared to some spots and the courts have stated that a process of making a product (i.e. microarray) does not define the product over the prior art.

35 USC § 102 over Barrett et al

15. Claims 1-5, 7, 9-15 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Barrett et al (U.S. Patent No. 5,252,743, issued 12 October 1993).

Regarding Claim 1, Barrett et al disclose a microarray support for immobilizing probe biomolecules, the support comprising a plurality of small-sized probe biomolecule-attachable spots arrayed in a regular arrangement on the surface of the support (Column 2, lines 38-52) and they further teach the microarray is formed by covering the surface of the support other

than the spots (the surface is covered with a mask (Column 19, lines 5-27) subjected the surface to biomolecule-immobilizing agent coating caged biotin and removing the cover (mask) wherein the forming utilizes photolithography (Column 18, line 55-Column 20, line 30).

Regarding Claim 2, Barrett et al disclose the microarray wherein the biomolecule-attachable spots have a layer selected from the group consisting of avidin, streptavidin, biotin, amino group, carbonyl group, hydroxyl group, succinimide group, maleimide group and thiol group i.e. binding member (Column 10, line 39-Column 1, line 20).

Regarding Claim 3, Barrett et al disclose the microarray wherein the support is glass, silicon or plastic (Column 8, lines 15-35).

Regarding Claim 4, Barrett et al disclose the microarray wherein said biomolecule-immobilizing agent coating is a layer of biotin molecules and further has a layer of avidin molecules bound to the biotin (Column 5, lines 45-Column 6, line 2).

Regarding Claim 5, Barrett et al disclose the microarray wherein probe biomolecules are DNA, RNA or proteins (Column 5, lines 3-11).

Regarding Claim 7, Barrett et al disclose the microarray wherein the probe biomolecules are biotin-labeled and are bound to the probe-attachable spots by biotin-avidin binding (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 9, Barrett et al disclose the microarray of Claim 2 wherein the support is glass, silicon or plastic (Column 8, lines 15-35).

Regarding Claim 10, Barrett et al disclose the microarray of Claim 2 wherein said biomolecule-attachable spot have avidin molecules bound to a single layer to the ends of biotin bound to the surface of the support (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 11, Barrett et al disclose the microarray of Claim 3 wherein said biomolecule-attachable spot have avidin molecules bound to a single layer to the ends of biotin bound to the surface of the support (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 12, Barrett et al disclose the microarray of Claim 2 wherein probe biomolecules are bound to the probe-attachable spots (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 13, Barrett et al disclose the microarray of Claim 3 wherein probe biomolecules are bound to the probe-attachable spots (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 14, Barrett et al disclose the microarray of Claim 4 wherein probe biomolecules are bound to the probe-attachable spots (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 15, Barrett et al disclose the microarray of claim 5 wherein the probe biomolecules are biotin-labeled and are bound to the probe-attachable spots by biotin-avidin binding (Example P, Column 31, line 16-Column 32, line 17).

Regarding Claim 19, Barrett et al disclose the microarray wherein probe biomolecules are DNA, RNA or proteins (Column 5, lines 3-11).

Regarding Claim 20, Barrett et al disclose the microarray wherein probe biomolecules are DNA, RNA or proteins (Column 5, lines 3-11).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barrett et al (U.S. Patent No. 5,252,743, issued 12 October 1993) in view of Wolber (U.S. Patent No. 6,284,465, filed 15 April 1999).

Regarding Claim 1, Barrett et al disclose a microarray support for immobilizing probe biomolecules, the support comprising a plurality of small-sized probe biomolecule-attachable spots arrayed in a regular arrangement on the surface of the support (Column 2, lines 38-52) and they further teach the microarray is formed by covering the surface of the support other than the spots (the surface is covered with a mask (Column 19, lines 5-27) subjected the surface to biomolecule-immobilizing agent coating caged biotin and removing the cover (mask) wherein the forming utilizes photolithography (Column 18, line 55-Column 20, line 30). Barrett et al are silent regarding the shape of the probe spots. However, Wolber teach a similar microarray comprising a plurality of small-sized probe spots arranged on a the surface of the support (Column 14, lines 50-61 and Fig. 1) wherein the spots are formed in the same shape a that of pixel elements of the computer (semiconductor) controlled imaging device (Fig. 2 # 29) wherein customized shape of the spots improves the cost-effectiveness of the microarray (Column 22, lines 10-26). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the customized spot shape of Wolber to the microarray of Barrett et al and to form the spots in the same shape as the pixel elements of the detector for the expected benefit of improving the cost-effectiveness of the microarray as taught by Wolber (Column 22, lines 10-26).

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

19. No claim is allowed.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878 until 13 January 2004. Starting 14 January 2004, the examiner's phone number will be (517) 272-0741. The examiner can normally be reached on 6:00 TO 3:30 Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196. Starting 14 January 2003, the receptionist telephone number will be (517)-272-0507.

BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
December 30, 2003